Agency for Healthcare Research and Quality
Advancing Excellence in Health Care

NATIONAL QUALITY MEASURES CLEARINGHOUSE

General

Title

Adult obstructive sleep apnea (OSA): proportion of patients aged 18 years and older diagnosed with OSA who were prescribed an evidence-based therapy after initial diagnosis.

Source(s)

Aurora RN, Collop NA, Jacobowitz O, Thomas SM, Quan SF, Aronsky AJ. Quality measures for the care of adult patients with obstructive sleep apnea. J Clin Sleep Med. 2015 Mar 15;11(3):357-83. PubMed

Measure Domain

Primary Measure Domain

Clinical Quality Measures: Process

Secondary Measure Domain

Does not apply to this measure

Brief Abstract

Description

This measure is used to assess the proportion of patients aged 18 years and older diagnosed with obstructive sleep apnea (OSA) who were prescribed an evidence-based therapy after initial diagnosis.

Rationale

In order to improve quality of life for patients who have obstructive sleep apnea (OSA), clinicians should employ an evidence-based therapy for OSA. No one treatment modality is universally accepted or used by all patients, and several treatment modalities are supported by evidence demonstrating improved alertness and quality of life in OSA patients. Thus, the clinician may consider various treatment options and match the modality appropriately to the patient's features and wishes.

Multiple treatment modalities are supported by evidence demonstrating improved alertness and quality of life in OSA patients. Evidence-based treatments include positive airway pressure (PAP) therapy (including continuous positive airway pressure [CPAP], bilevel positive airway pressure [BPAP], and auto-titrating

positive airway pressure [APAP]), oral appliances, upper airway surgery, and positional therapy. While weight loss may be beneficial for many OSA patients, it was not included as it was considered a useful adjunctive treatment, rather than an active modality of therapy.

Randomized controlled and observational studies support positive airway pressure therapy for improved alertness and quality of life in patients with severe OSA and sleepy patients with mild to moderate OSA (Weaver et al., 2012; Doff et al., 2013). The AASM practice parameters recommend CPAP for improving self-reported sleepiness in patients with OSA (Standard) and for improving quality of life in patients with OSA (Kushida et al., 2006).

For oral appliance therapy, there are randomized trials, placebo controlled or in parallel cohort with CPAP for improved alertness and quality of life (Doff et al., 2013; Petri et al., 2008; Gotsopoulos et al., 2002; Naismith et al., 2005). The benefits were demonstrated for some patients with severe OSA as well (Doff et al., 2013).

Surgical airway reconstruction is evidence-based (Caples et al., 2010), largely supported by cohort, case-series studies and a randomized control study for quality of life and alertness effects (Woodson et al., 2003; Holty & Guilleminault, 2010; Robinson et al., 2009; Vicini et al., 2010).

Positional therapies for avoidance of supine sleep position in OSA patients selected for supine position dependency of the AHI are also evidence-based for improving quality of life and function, but evidence is from a few small case series and randomized studies (Jokic et al., 1999; Oksenberg et al., 2006; Skinner et al., 2008).

This process measure of prescribing evidence-based therapies may familiarize some clinicians with additional treatment modalities not previously considered and may provide support for some treatment modalities not considered a covered service by some insurance carriers.

Evidence for Rationale

Aurora RN, Collop NA, Jacobowitz O, Thomas SM, Quan SF, Aronsky AJ. Quality measures for the care of adult patients with obstructive sleep apnea. J Clin Sleep Med. 2015 Mar 15;11(3):357-83. PubMed

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Weaver TE, Mancini C, Maislin G, Cater J, Staley B, Landis JR, Ferguson KA, George CF, Schulman DA, Greenberg H, Rapoport DM, Walsleben JA, Lee-Chiong T, Gurubhagavatula I, Kuna ST. Continuous positive airway pressure treatment of sleepy patients with milder obstructive sleep apnea: results of the CPAP Apnea Trial North American Program (CATNAP) randomized clinical trial. Am J Respir Crit Care Med. 2012 Oct 1;186(7):677-83. PubMed

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Primary Health Components

Obstructive sleep apnea (OSA); therapy; positive airway pressure; oral appliances; positional therapy; upper airway surgery

Denominator Description

All patients aged 18 years and older with a diagnosis of obstructive sleep apnea (OSA) (see the related "Denominator Inclusions/Exclusions" field)

Numerator Description

Number of patients who were prescribed evidence-based therapies (such as positive airway pressure, oral appliances, positional therapies, upper airway surgeries) after initial diagnosis (see related "Numerator Inclusions/Exclusions" field)

Evidence Supporting the Measure

Type of Evidence Supporting the Criterion of Quality for the Measure

A clinical practice guideline or other peer-reviewed synthesis of the clinical research evidence

A formal consensus procedure, involving experts in relevant clinical, methodological, public health and organizational sciences

A systematic review of the clinical research literature (e.g., Cochrane Review)

One or more research studies published in a National Library of Medicine (NLM) indexed, peer-reviewed journal

Additional Information Supporting Need for the Measure

- Obstructive sleep apnea (OSA) is one of the most prevalent sleep disorders, affecting approximately to 3% to 7% of men and 2% to 5% of women in the general population (Punjabi, 2008; Stradling & Davies, 2004; Young et al., 1993; Young, Peppard, & Gottlieb, 2002). When polysomnographic criteria alone are considered, the prevalence rate increases dramatically to 24% in men and 9% in women (Young et al., 1993). Despite the fact that OSA is a common disease, it remains considerably underdiagnosed, with 75% to 80% of cases remaining unidentified (Kapur et al., 2002; Young, Skatrud, & Peppard, 2004).
- The implications of untreated OSA are significant from the individual patient, healthcare, and economic perspectives. For the affected individual, OSA is associated with a number of nocturnal symptoms, as well as with difficulty in daytime functioning secondary to daytime sleepiness, irritability, fatigue, and decreased cognitive functioning (Punjabi, 2008). In fact, untreated OSA has been shown to significantly reduce quality of life (Baldwin et al., 2001; Lopes et al., 2008). Furthermore, untreated OSA (especially severe OSA) is associated with a multitude of adverse health outcomes including cardiovascular disease (Lurie, 2011), disorders of glucose metabolism including insulin resistance and diabetes (Aurora & Punjabi, 2013; Gharibeh & Mehra, 2010), stroke (Redline et al., 2010), and an increased risk of death (Punjabi et al., 2009). Another compelling motivation for early case identification and treatment of OSA is the higher prevalence of traffic accidents noted in persons with untreated OSA (Horstmann et al., 2000; Sassani et al., 2004; Teran-Santos, Jimenez-Gomez, & Cordero-Guevara, 1999). From an economic perspective, the healthcare costs and resource utilization of undiagnosed OSA is staggering, running into billions of dollars per year (Alghanim et al., 2008; The Harvard Medical School Division of Sleep Medicine, 2010), similar to other chronic disorders. The financial burden of OSA-related motor vehicle crashes alone is enormous. Furthermore, therapy for OSA seems to reduce comorbidities associated with OSA as well as healthcare costs and utilization (Albarrak et al., 2005; Banno et al., 2006).

Evidence for Additional Information Supporting Need for the Measure

Albarrak M, Banno K, Sabbagh AA, Delaive K, Walld R, Manfreda J, Kryger MH. Utilization of healthcare resources in obstructive sleep apnea syndrome: a 5-year follow-up study in men using CPAP. Sleep. 2005 Oct;28(10):1306-11. PubMed

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Gharibeh T, Mehra R. Obstructive sleep apnea syndrome: natural history, diagnosis, and emerging treatment options. Nat Sci Sleep. 2010;2:233-55. PubMed

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Lopes C, Esteves AM, Bittencourt LR, Tufik S, Mello MT. Relationship between the quality of life and the severity of obstructive sleep apnea syndrome. Braz J Med Biol Res. 2008 Oct;41(10):908-13. PubMed

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Punjabi NM. The epidemiology of adult obstructive sleep apnea. Proc Am Thorac Soc. 2008 Feb 15;5(2):136-43. PubMed

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Sassani A, Findley LJ, Kryger M, Goldlust E, George C, Davidson TM. Reducing motor-vehicle collisions, costs, and fatalities by treating obstructive sleep apnea syndrome. Sleep. 2004 May 1;27(3):453-8. PubMed

Stradling JR, Davies RJ. Sleep. 1: Obstructive sleep apnoea/hypopnoea syndrome: definitions, epidemiology, and natural history. Thorax. 2004 Jan;59(1):73-8. PubMed

Teran-Santos J, Jimenez-Gomez A, Cordero-Guevara J. The association between sleep apnea and the risk of traffic accidents. Cooperative Group Burgos-Santander. N Engl J Med. 1999 Mar 18;340(11):847-51. PubMed

The Harvard Medical School Division of Sleep Medicine. The price of fatigue: the surprising economic costs of unmanaged sleep apnea. [internet]. 2010 [accessed 2014 Aug 08].

Young T, Palta M, Dempsey J, Skatrud J, Weber S, Badr S. The occurrence of sleep-disordered breathing among middle-aged adults. N Engl J Med. 1993 Apr 29;328(17):1230-5. PubMed

Young T, Peppard PE, Gottlieb DJ. Epidemiology of obstructive sleep apnea: a population health

perspective. Am J Respir Crit Care Med. 2002 May 1;165(9):1217-39.

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Extent of Measure Testing

Unspecified

State of Use of the Measure

State of Use

Current routine use

Current Use

not defined yet

Application of the Measure in its Current Use

Measurement Setting

Ambulatory/Office-based Care

Professionals Involved in Delivery of Health Services

not defined yet

Least Aggregated Level of Services Delivery Addressed

Individual Clinicians or Public Health Professionals

Statement of Acceptable Minimum Sample Size

Does not apply to this measure

Target Population Age

Age greater than or equal to 18 years

Target Population Gender

Either male or female

National Strategy for Quality Improvement in Health Care

National Quality Strategy Aim

Better Care

National Quality Strategy Priority

Prevention and Treatment of Leading Causes of Mortality

Institute of Medicine (IOM) National Health Care Quality Report Categories

IOM Care Need

Living with Illness

IOM Domain

Effectiveness

Data Collection for the Measure

Case Finding Period

Unspecified

Denominator Sampling Frame

Patients associated with provider

Denominator (Index) Event or Characteristic

Clinical Condition

Patient/Individual (Consumer) Characteristic

Denominator Time Window

not defined yet

Denominator Inclusions/Exclusions

Inclusions

All patients aged 18 years and older with a diagnosis of obstructive sleep apnea (OSA)

Note: Refer to the original measure documentation for administrative codes.

Exclusions
Unspecified

Exceptions

> *Patient Reasons*: Patients who do not wish to be prescribed therapy; patients who do not return for follow-up after initial diagnosis.
> *System Reasons*: Patients whose insurance (payer) does not cover the expense.

Exclusions/Exceptions

not defined yet

Numerator Inclusions/Exclusions

Inclusions
Number of patients who were prescribed evidence-based therapies (such as positive airway pressure, oral appliances, positional therapies, upper airway surgeries) after initial diagnosis

Note: Weight loss is considered adjunctive therapy.

Exclusions
Unspecified

Numerator Search Strategy

Fixed time period or point in time

Data Source

Administrative clinical data

Electronic health/medical record

Paper medical record

Type of Health State

Does not apply to this measure

Instruments Used and/or Associated with the Measure

Unspecified

Computation of the Measure

Measure Specifies Disaggregation

Does not apply to this measure

Scoring

Rate/Proportion

Interpretation of Score

Desired value is a higher score

Allowance for Patient or Population Factors

not defined yet

Standard of Comparison

not defined yet

Identifying Information

Original Title

Process measure #3: evidenced-based therapy prescribed.

Measure Collection Name

Adult Obstructive Sleep Apnea

Submitter

American Academy of Sleep Medicine - Medical Specialty Society

Developer

American Academy of Sleep Medicine - Medical Specialty Society

Funding Source(s)

American Academy of Sleep Medicine

Composition of the Group that Developed the Measure

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Financial Disclosures/Other Potential Conflicts of Interest

This was not an industry supported study. Dr. Collop is Editor-In-Chief of the *Journal of Clinical Sleep Medicine* and has received royalties from UpToDate. Dr. Jacobowitz has received research support from ImThera Medical Research. Dr. Thomas is an employee of the American Academy of Sleep Medicine. Dr. Quan is Editor Emeritus of the *Journal of Clinical Sleep Medicine* and has consulted for GCC (Global Corporate Challenge). Dr. Aronsky is employed by CareCentrix, Inc., a benefit management company and is a past member of the American Academy of Sleep Medicine Board of Directors. The other authors have indicated no financial conflicts of interest.

Measure Initiative(s)

Physician Quality Reporting System

Adaptation

This measure was not adapted from another source.

Date of Most Current Version in NQMC

2015 Mar

Measure Maintenance

Unspecified

Date of Next Anticipated Revision

Unspecified

Measure Status

This is the current release of the measure.

This measure updates a previous version: American Academy of Sleep Medicine (AASM), Physician Consortium for Performance Improvement®, National Committee for Quality Assurance (NCQA). Obstructive sleep apnea physician performance measurement set. Chicago (IL): American Medical Association (AMA); 2008 Sep 26. 21 p.

Measure Availability

Source not available electronically.

For more information, contact the American Academy of Sleep Medicine (AASM) at 2510 North Frontage Road, Darien, IL 60561; Phone: 630-737-9700; Fax: 630-737-9790; E-mail: webmaster@aasmnet.org; Web site: www.aasmnet.org/ .

NQMC Status

This NQMC summary was completed by ECRI Institute on April 13, 2009. The information was verified by

the measure developer on April 1, 2010.

This NQMC summary was retrofitted into the new template on June 7, 2011.

Stewardship for this measure was transferred from the PCPI to the American Academy of Sleep Medicine. The American Academy of Sleep Medicine informed NQMC that this measure was updated. This NQMC summary was updated by ECRI Institute on October 26, 2015. The information was verified by the measure developer on November 13, 2015.

Copyright Statement

Production

Source(s)

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